View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by Elsevier - Publisher Connector

global and regional longitudinal systolic ventricular function in fetuses with HLHS using velocity vector imaging (VVI) and to determine the influence of gestational age on these variables.

METHODS Twenty HLHS fetuses were enrolled during second and third trimester (20-35 weeks). The control group were 1:1 paired normal fetuses. Two-dimensional grayscale image clips with high frame rates were obtained from four-chamber views and were used for offline analyses. Longitudinal strain, strain rate, time to peak strain and systolic velocity were measured in the left ventricular free wall, ventricular septum and right ventricular free wall in both HLHS and control groups. The correlation of these variables and measurements with gestational age was also analyzed.

RESULTS Data acquisition and analysis were feasible in all HLHS and control fetuses. There were significant statistical differences in the left and right ventricular global velocity, strain, strain rate and strain time to peak between HLHS and control groups (p0.05).

CONCLUSIONS In fetuses with HLHS, there is significantly diminished left ventricular myocardial longitudinal function by VVI compared with those of the control group. The right ventricular myocardial longitudinal systolic function is also reduced. The VVI variables may provide valuable quantitative measures for longitudinal follow-up of fetuses with HLHS.

GW26-e2441

Left atrium appendage orifice area and left atrial volume as predictors for the risk of stroke in patients with atrial fibrillation

Jie-ming Zhu, Rui-min Dong, Zhen-da Zheng, Xu-jing Xie, Jie Qin, Yan-ting Luo, Jin-lai Liu
Department of Cardiology, the Third Affiliated Hospital, Sun Yat-sen University, Tian-he Road, Guangzhou 510630, China

OBJECTIVES To investigated the predictive values of left atrium appendage (LAA) orifice area and left atrial volume (LAV) for the risk of stroke in patients with atrial fibrillation (AF) evaluated by CHA2DS2-VASc scores and LAA thrombus formation.

METHODS A total of 234 patients with non-valvular AF were enrolled from March, 2012 to March, 2015. CHA2DS2-VASc scores were calculated for all patients and defined as low-risk (score=0), moderate-risk (score=1) and high-risk (score≥2). Transesophageal echocardiography was performed to assess LAA thrombus. LAA orifice area was evaluated by 320-slice computed tomography. LAV was measured by transthoracic echocardiography. Correlations among LAA orifice area, LAV, CHA2DS2-VASc scores and LAA thrombus were assessed by Pearson or Spearman correlation analysis. Multivariate logistic regression analysis was used to evaluate the predictive values of LAA orifice area and LAV for the risk of stroke.

RESULTS Among 234 AF patients, 47 (20.1%) were defined as low-risk, 73 (31.2%) as moderate-risk and 114 (48.7%) as high-risk. LAA thrombus was observed in 15 (6.4%) patients, with 1 (2.1%) in low-risk patients, 4 (5.4%) in moderate-risk patients and 9 (7.9%) in high-risk patients ($p<0.05$). Both LAA orifice area and LAV were positively correlated with CHA2DS2-VASc scores and LAA thrombus formation ($p<0.05$). Multivariate regression analysis confirmed that both LAA orifice area (Odds ratio 1.579 95% CI 1.015-2.659, $p<0.01$) and LAV (Odds ratio 1.362, 95% CI 1.125-2.741, $p<0.01$) were independent predictors for the increase risk of stroke after adjustment for other risk factors.

CONCLUSIONS LAA orifice area and LAV might serve as potential predictors for the risk of stroke in AF patients.

GW26-e3541

Diagnostic accuracy of 320-slice dynamic volume computed tomography angiography for detection of coronary artery stenosis in patients with atrial fibrillation

Xuelian Liu,[1] Limin Liang,[3] Xianhui Liang,[1] Baoshun Hao[2]
[1]Department of Radiology, The Third Affiliated Hospital of Sun Yat-sen University; [2]Department of Cardiology, The Third Affiliated Hospital of Sun Yat-sen University; [3]Nursing Department, The Third Affiliated Hospital of Sun Yat-sen University

OBJECTIVES To evaluate the diagnostic accuracy of 320-slice dynamic volume CT angiography (CTA) in assessment of coronary artery stenosis in patients with atrial fibrillation (AF) compared with selective coronary angiography (SCA).

METHODS Seventy-two patients (49males, 63.9±12.5 years) with persistent AF were consecutively enrolled. All patients with suspected coronary artery disease were referred to 320-slice DVCT coronary angiography(Aquilion One, Toshiba Medical) followed by selective catheter coronary angiography. The catheter coronary angiography were performed via radial or femoral arterial puncture. The image quality of CTA was analyzed. The presence of significant stenosis (≥50%) were evaluated by two radiologists blinded to the results of SCA. The results of CTA were compared with SCA as the gold standard. The sensitivity, specificity, positive and negative predictive value of detecting significant coronary stenosis were calculated.

RESULTS The image quality acquired from CTA in patients with AF were moderate and acceptable to evaluate coronary stenosis. On segment analysis, the sensitivity, specificity, positive and negative predictive value of 320-DVCT coronary angiography in detection of significant stenosis were 93.7%, 99.2%, 87.2% and 99.7%, respectively.

CONCLUSIONS 320-slice DVCT angiography can provide acceptable coronary artery imaging. It is a very helpful and non-invasive coronary imaging modality that enable to detect significant coronary artery stenosis in patients with AF. Due to its very high negative predictive value, it is accurate to exclude coronary artery disease in patients with AF.

GW26-e0399

Analysis of CarotidPlaques in Borderline Coronary Lesion on Angina Pectoris Patients

Zhihong Zhao, Xinming Li
ZhouPu Hospital, Pudong district, Shang Hai, 201318, P.R. China

OBJECTIVES Carotid ultrasound is the simplest, non-invasive imaging test and has been widely used as a surrogate marker of atherosclerotic diseaseand for established surrogate markers for coronary artery disease (CAD) as well.

METHODS The aim of the present study is to evaluatethe impact of carotid plaque, carotid intima-media thickness(CIMT) with theborderline coronary lesion(BCL) plaques responsible for angina pectoris and itscharacteristics. Methods: Carotid ultrasound studies were recorded, and we analyzed 99BCL plaques from angina pectoris patients using virtual histology-intravascular ultrasound (VH-IVUS). Plaque burden and lumen area were measured with VH-IVUS. Compare patients characteristics, laboratory findings, coronary artery disease distribution and VH-IVUS detectedthin-cap fibroatheroma, thick-cap fibroatheroma, pathological intimal thickening, fibrotic plaque, fibrocalcificplaquephenotypegroups. The relationship of carotid plaque and coronary plaque were analyzed.

RESULTS Patients with carotid plaque (n=62) had non-higher prevalence of hypertension, diabetes mellitus, and dyslipidemia than those without carotid plaque patients (n=37). Angina pectoris with BCL on angiography, patients with carotid plaque or not, blood fat, BUN, glucose, creatinine, troponin et al laboratory findings andcoronary artery disease distribution have no difference($P>0.05$);next, wecompared to the VH-IVUS detected kinds ofplaque phenotype groups, and plaquecomponents analysis, found no different between carotid plaque or not group.Also the carotid ultrasoundparameter includingcarotid diameter, resistance index, maximum flow velocity and CIMT were similar in 2 groupsof the total study population($P>0.05$).

CONCLUSIONS Angina pectorispatients with borderline coronary lesionplaques, carotid plaque and CIMT have nointerrelationwith coronary plaque, including the plaque component.

GW26-e1400

Changes in left ventricular blood flow after renal transplantation

Hui Zhang,[1] Shujie Yu,[2] Erhong Zhang,[3] Guanghui Guo,[1] Rongqin Zheng[1]
[1]Department of Ultrasound, the 3rd Affiliated Hospital of Sun Yat-sen University; [2]Department of Cardiovascular Medicine, the 3rd Affiliated Hospital of Sun Yat-sen University; [3]Department of Infertility and Sexual Medicine, The Third Affiliated Hospital, Sun Yat-sen University

OBJECTIVES We measured left ventricular blood flow field parameters in patients before and 3 months after renal transplantation using vector flow mapping (VFM).

METHODS Sixteen patients (10 men, 6 women, aged 31–59 years old, mean ± standard deviation [SD], 44 ± 11) were scheduled to undergo allograft renal transplantation in the Third Affiliated Hospital of Sun Yat-sen University. No patients had a smoking history. Exclusion criteria were significant valvular heart disease, heart valve operation,